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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,893	03/31/2004	Frederick L. Travelute III	3000.193	5764
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SUMMA, ALLAN & ADDITON, P.A. 11610 NORTH COMMUNITY HOUSE ROAD SUITE 200 CHARLOTTE, NC 28277				
			EXAMINER	
			VO, HAI	
			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 08/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/813,893

Applicant(s)

TRAVELUTE ET AL.

Examiner

Hai Vo

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-21 and 40-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-21 and 40-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0807.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

1. The art rejections over Travelute et al (US 5,407,625) taken individually are maintained.
2. The art rejections over Travelute et al in view of Nichols et al (US 6,485,829) have been withdrawn in view of the present arguments. Travelute does not disclose a self-crimping fiber made from polyester having a hollow core and a foamed sheath.
3. Rejection of independent claim 1 based on Siggel et al (US 4,164,603) and Nichols et al has been withdrawn in view of the present arguments. The combination of the cited references does not teach an amount of the nucleating agent.
4. Rejection of claim 40 based on Li et al (US 4,626,390) and Nichols et al has been withdrawn in view of the present arguments. Neither Li nor Nichols teaches or suggests different degrees of orientation along at least two adjacent longitudinal portions of the filament. However, rejections of other claims based on the combined teachings of Li and Nichols are maintained.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 55-57, and 60 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Travelute et al (US 5,407,625). Travelute discloses a self-texturing fiber made from polyester having a porosity of 25 to 35% by volume (column 5, lines 35-37). It appears that Travelute is using the same process to form the self-crimping, self-texturing fibers as Applicants, therefore, it is not seen that the surface elements could not have the same dimension as the same process is employed, i.e., quenching, relaxing, drawing and heat setting. Travelute does not specifically disclose the fiber density. However, the density is dictated by the porosity and the porosity is within the claimed range, therefore, it is the examiner's position that the density would be inherently present within the claimed range. Accordingly, Travelute anticipates or strongly suggests the claimed subject matter.

The art rejections over Travelute have been maintained for the following reasons. Applicants argue that nowhere does Travelute disclose or suggest the irregular surface effects. The examiner respectfully disagrees. It appears that Travelute is using the same material and the process to form the self-crimping, self-texturing fibers as Applicants, therefore, it is not seen that the surface elements could not have the same dimension as the same process is employed, i.e., quenching, relaxing, drawing and heat setting. Therefore, It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is

incomplete (Note discussion found in Ex parte Slob, 157 USPQ 172). This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties.

8. Claims 1-6, 10, 11, and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Siggel et al (US 4,164,603) in view of Nichols et al (US 6,485,829) and Soehngen et al (US 4,290,987). Siggel discloses a filament of polyester having a plurality of voids which occupy from 5 to 50 volume % within the claimed range (column 5, lines 5-7). The filament has 12 to 18 cells per axial cross section (column 8, lines 50-51). The filament contains silicone and a nucleating agent which aids the formation of the voids during the spinning process (column 2, lines 55-60). Siggel discloses the filament with a density lower than 1 g/cc can be obtained (column 4, lines 19-20). There are no burst surface areas in the filament (column 9, lines 28-29). Likewise, the filament has a smooth surface. The filaments are useful as an upholstery material which reads on Applicants' fabric material (example 3). Siggel does not specifically disclose the use of copolymer of polyester and polyethylene glycol for the filaments. Nichols, however, discloses a non-woven fabric material made from filaments of a polyester modified with polyethylene glycol in the amount of 6% by weight to 16% by weight to increase the wetting and wicking properties of the fabric while maintaining the elasticity of the polyester fibers. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the copolymer of polyester and polyethylene glycol for the polyester filament motivated by the desire to increase the

wetting and wicking properties of the fabric while maintaining the elasticity of the polyester fibers.

Siggel discloses the use of the nucleating agent but Siggel does not specifically disclose how much the nucleating agent is used. Soehngen, however, teaches the use of silica or PTFE particle with a particle size of 0.5 to 1 microns as a nucleating agent for the formation of polyester filaments (column 5, lines 25-30, 45-50). Soehngen teaches the nucleating agent present in the amount of 0.01 to 1 % by weight of the polyester composition. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the nucleating agent with the amount as taught by Soehngen motivated by the desire to aid the formation of the voids during the spinning process. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the PTFE particle for the silica as the nucleating agent since PTFE and silica have been shown in the art to be recognized equivalent nucleating agents for low density polyester fibers.

9. Claims 8, 9, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Siggel et al (US 4,164,603) in view of Nichols et al (US 6,485,829) and Soehngen et al (US 4,290,987) as applied to claim 1 above, further in view of JP 08-260285. Siggel does not disclose the fibers having the grooves formed on the fiber surfaces. JP'285, however, teaches a woven polyester fabric comprising the fibers having the grooves formed on the fiber surfaces to provide a fabric having a high class feeling rich in a lightweight feeling (abstract). Therefore, it would have been

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obvious to one having ordinary skill in the art at the time the invention was made to use fibers having the grooves formed on the fiber surfaces motivated by the desire to provide a fabric having a high class feeling rich in a lightweight feeling.

10. Claims 55-57 and 60 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Li et al (US 4,626,390). Li discloses a self-crimping foamed fiber made from polyester having a volume fraction of at least 10 % overlapping with the claimed range (abstract). The foamed fiber has at least 5 cells per axial cross section as shown in figure 5. Li discloses the foamed fiber having a denier of 15 and a density less than 0.9 g/cc (table). Li discloses the fiber having a plurality of closed cells and open cells distributed over the cross-sectional area of the fiber (column 1, lines 10-15). As shown in figures 6-10, the fiber has a fibrillated surface. Li does not teach the fiber with irregular longitudinal surface effects. However, in accordance with the specification of the present invention, "a fibrillated" refers to fibrils that extend from the main fiber but are quite smaller than the main fiber wherein the fibrils have length much longer than the diameter and width much smaller than the diameter (paragraph no. 28). Therefore, it is the examiner's position that the fibrillated surface would substantially inherently have the irregular longitudinal surface effects as set forth in the claims. Accordingly, Li anticipates or strongly suggests the claimed subject matter.

11. Claims 1-7, 10, 11, 13-15, 17-19, 58 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al (US 4,626,390) in view of Nichols et al (US 6,485,829). Li discloses a self-crimping foamed fiber made from polyester having a

volume fraction of at least 10 % overlapping with the claimed range (abstract). The foamed fiber has at least 5 cells per axial cross section as shown in figure 5. Li discloses talc present in the amount of 0.2 % by weight (example 3). Li discloses the foamed fiber having a denier of 15 and a density less than 0.9 g/cc (table). Li discloses the fiber having a plurality of closed cells and open cells distributed over the cross-sectional area of the fiber (column 1, lines 10-15). Figure 5 shows that the foamed fibers having a pitted surface. As shown in figures 6-10, the fiber has a fibrillated surface. Li does not specifically disclose the use of copolymer of polyester and polyethylene glycol for the filaments. Nichols, however, discloses a non-woven fabric material made from filaments of a polyester modified with polyethylene glycol in the amount of 6% by weight to 16% by weight to increase the wetting and wicking properties of the fabric while maintaining the elasticity of the polyester fibers. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the copolymer of polyester and polyethylene glycol for the polyester filament motivated by the desire to increase the wetting and wicking properties of the fabric while maintaining the elasticity of the polyester fibers.

Li does not specifically disclose that the self-crimped foamed fiber is hollow. However, Li mentions the hollow fibers are known in the art. Therefore, there are no reasons why not to form the hollow self-crimped foam fibers. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the hollow self-crimped foamed fibers motivated by the desire to

reduce the weight and the cost of the product without affecting the mechanical strength of the fibers.

12. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al (US 4,626,390) in view of Nichols et al (US 6,485,829) as applied to claim 1 above, further in view of Soehngen et al (US 4,290,987). Li discloses the use of silica as a nucleating agent, but Li does not specifically disclose the use of PTFE particle as the nucleating agent. Soehngen, however, teaches the use of silica or PTFE particle with a particle size of 0.5 to 1 microns as a nucleating agent for the formation of polyester fibers (column 5, lines 25-30, 45-50). Soehngen teaches the nucleating agent present in the amount of 0.01 to 1 % by weight of the polyester composition. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute PTFE particles for silica since two substances have been shown in the art to be recognized equivalent nucleating agents for formation of polyester fibers.
13. Claims 8, 9, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al (US 4,626,390) in view of Nichols et al (US 6,485,829) as applied to claim 1 above, further in view of JP 08-260285. Li does not disclose the fibers having the grooves formed on the fiber surfaces. JP'285, however, teaches a woven polyester fabric comprising the fibers having the grooves formed on the fiber surfaces to provide a fabric having a high class feeling rich in a lightweight feeling (abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use fibers having the grooves formed on

the fiber surfaces motivated by the desire to provide a fabric having a high class feeling rich in a lightweight feeling.

The art rejections based on Li have been maintained for the following reasons. Applicants argue that Li does not teach an amount of the nucleating agent. The examiner respectfully disagrees. The examiner directs Applicants' attention to example 3. Li discloses the use of 0.2 % MicroPflex 1200 which is known as a submicron, chemically treated synthetic magnesium silicate. Applicants argue that nothing in Li or Nichols suggests increasing the elasticity of the copolymer will enhance the foam-making process and the resulting foam. The arguments are not found persuasive for patentability because the fact that applicants have recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). As long as there is a motivation or suggestion to combine the teachings of the references and the combined teachings provides a reasonable expectation of success, the combined teachings of Li and Nichols do make out a *prima facie* case of obviousness.

14. Claims 40-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al (US 4,626,390) in view of Nichols et al (US 6,485,829) and Travelute et al (US 5,407,625). Li discloses a self-crimping foamed fiber made from polyester having a volume fraction of at least 10 % overlapping with the claimed range (abstract). The foamed fiber has at least 5 cells per axial cross section as shown in figure 5. Li

discloses silica as a nucleating agent present in the amount of at least 0.2 % by weight (column 3, line 35 and column 4, line 1-2). Li discloses the foamed fiber having a denier of 15 and a density less than 0.9 g/cc (table). Li discloses the fiber having a plurality of closed cells and open cells distributed over the cross-sectional area of the fiber (column 1, lines 10-15). Figure 5 shows that the foamed fibers having a pitted surface. As shown in figures 6-10, the fiber has a fibrillated surface. Li does not specifically disclose the use of copolymer of polyester and polyethylene glycol for the filaments. Nichols, however, discloses a non-woven fabric material made from filaments of a polyester modified with polyethylene glycol in the amount of 6% by weight to 16% by weight to increase the wetting and wicking properties of the fabric while maintaining the elasticity of the polyester fibers. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the copolymer of polyester and polyethylene glycol for the polyester filament motivated by the desire to increase the wetting and wicking properties of the fabric while maintaining the elasticity of the polyester fibers.

Li does not specifically disclose that the self-crimped foamed fiber is hollow. However, Li mentions the hollow fibers are known in the art. Therefore, there are no reasons why not to form the hollow self-crimped foam fibers. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the hollow self-crimped foamed fibers motivated by the desire to reduce the weight and the cost of the product without affecting the mechanical strength of the fibers.

Li does not specifically disclose the self-crimped foamed fiber having different degrees of orientation along at least two adjacent longitudinal portions of the fiber. Travelute, however, teaches self-texturing filament having different degrees of orientation along at least two adjacent longitudinal portions of the filament. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the foamed fibers having different degrees of orientation along at least two adjacent longitudinal portions of the filament by preferentially directionally quenching as disclosed by Travelute because the differences in orientation cause the filament to shrink to different extents on the opposite sides of its cross section, thereby enhancing the crimping of the fibers, i.e., a helical or spiral crimp of the filament is obtained.

Double Patenting

15. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

16. Claims 1-11, 13-21 and 40-60 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-23 and 41-55 of copending Application No. 11/091,413 in view of Nichols et al (US 6,485,829). The claims of the copending Application No. 11/091,413 teach each and every limitation of the claims except the polyester copolymer. Nichols, however, discloses a non-woven fabric material made from filaments of a copolymer of polyester and polyethylene glycol in the amount of 6% by weight to 16% by weight to increase the wetting and wicking properties of the fabric while maintaining the elasticity of the polyester fibers. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use copolymer of polyester for the filament motivated by the desire to increase the wetting and wicking properties of the fabric while maintaining the elasticity of the polyester fibers.

This is a provisional obviousness-type double patenting rejection.

Applicants argue that the double patenting rejection should be withdrawn as either premature or unnecessary. The examiner respectfully disagrees. While it is true that the copending application 11/091,413 is a continuation in-part of the present application, the claims of the copending application 11/091,413 are not subjected to the inventions that have been restricted in the restriction made in the present invention. The arguments that the copending application 11/091,413 is not a prior art under 103(c) as against the present invention are irrelevant to the double

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patenting analysis. Since there is a motivation to combine the teachings of the application 11/091,413 and Nichols and the combination does provide a reasonable expectation of success, the double patenting rejection is sustained.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on M,T,Th, F, 7:00-4:30 and on alternating Wednesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HV

Hai Vo

**HAIVO
PRIMARY EXAMINER**